RADIO FREQUENCY INTEGRATED CIRCUIT HAVING AN ANTENNA DIVERSITY STRUCTURE

ABSTRACT OF THE DISCLOSURE

A radio frequency integrated circuit includes a power amplifier, a low noise amplifier, a first transformer balun, and a second transformer balun. The power amplifier includes a first power amplifier section and a second power amplifier section. When enabled, the first and second power amplifier sections amplify an outbound radio frequency (RF) signal to produce a first amplified outbound RF signal and a second amplified outbound RF signal, respectively. The power amplifier provides the first amplified outbound RF signal to the first transformer balun and the second outbound RF signal to the second transformer balun, where the first transformer balun is coupled to a first antenna and the second transformer balun is coupled to a second antenna. The low noise amplifier includes a first low noise amplifier section and a second low noise amplifier section. When enabled, the first low noise amplifier section amplifies a first inbound RF signal to produce a first amplified inbound RF signal, and, when enabled, the second low noise amplifier section amplifies a second inbound RF signal to produce a second amplified inbound RF signal. The low noise amplifier receives the first inbound RF signal from the first transformer balun and receives the second inbound RF signal from the second transformer balun.